Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

to the conclusion that in former times, during the present era, the lake must have been at least three meters higher than its present level.——M. Lessar has returned from Saraks, whither he journeyed through the flat country called the Altek, inhabited chiefly by Tekke Turcomans, except two villages occupied by Persian Shiites. Most of the natives live in clay houses, and subsist by agriculture.——Dr. Otto Finsch has returned to Berlin, after two and a half years in Polynesia and Australia. He has visited the Sandwich, Marshall, and Caroline islands, also New Britain, New Zealand, Australia and Tasmania, as well as the islands in Torres straits and the south coast of New Guinea, where he stayed six months, and instituted comparisons between the Papuans and Eastern Melavesians. He brings a rich collection, and is accompanied by a native of New Britain, aged 15.

GEOLOGY AND PALÆONTOLOGY.

THE SEDIMENTS OF THE GULF STREAM SLOPE.—Professor Verrill states that the bottom of this slope, in from 70 to 300 fathoms, 60 to 120 miles from land, is mainly formed of very fine quartz sand, intermixed with feldspar, mica, magnetite, etc., and with a considerable percentage of foraminiferous shells. Spherical, rod-like and stellate sand-covered rhizopods also often occur in large quantities. The sand is often so fine as to resemble mud, and in the deeper localities true clayey mud may be met with, yet as a whole the region is characterized by the prevalence of fine sand, and the absence of mud, a circumstance which appears to indicate the presence of a current sufficient to prevent the deposition of mud along the upper portion of the slope.

Throughout the belt, even to over 700 fathoms, occur numerous pebbles and small rounded boulders of granite, syenite, mica-schist, etc., that have probably been dropped from shore ice that has floated out into the Gulf stream.

At several localities concretions of a peculiar calcareous rock, varying in size from a few inches in diameter up to twenty-nine inches long, fourteen wide and six thick, were dredged up. Professor Verrill believes these to be of deep-sea origin. They differ much in color and fineness of grain, but are all composed of siliceous sand cemented together by lime in greater or less abundance.

No rocks of this kind are found on the coast, and it is scarcely possible that marine currents sufficiently powerful to erode them exist at these depths, but Professor Verrill thinks it possible that their detachment may be due to the habits of certain fishes and crustacea. The hakes (Phycis) root in the mud like pigs for annelids and other mud-dwelling invertebrates; the Macruri burrow into the bottom tail first; the eels are all burrowers, and so are many crabs. The action of these creatures would enable the currents to wash away the finer materials, and leave the coarser.

Shells, broken and unbroken, are very abundant in many places. The broken shells have probably been preyed upon by such Cancroids as *C. borealis* or Geryon, or the larger Paguridæ; and many fishes break the shells of the mollusks they devour. On the other hand many fishes, as the cod, haddock, hake, etc., swallow shells entire, digest their contents, and discharge the shells uninjured, and the same is the case with star fishes. Sponges and boring annelids prevent the great accumulation of molluscan remains.

Vertebrate bones, whether fish or cetacean, are very rare, and it is probable that the bones as well as the flesh of all vertebrates that die are speedily consumed by the life at the bottom. A few clinkers, fragments of coal and ashes from the steamers, are the only traces of man.

FILHOL'S FOSSIL MAMMALS OF RONZON.[1]—The calcareous marls of Ronzon, near Puy, have during the last thirty years furnished numerous mammalian remains. The beds belong to the earliest miocene, and are not only rich in mammals, but contain species of birds, reptiles and fishes, as well as of insects, crustacea, and mollusks. Notwithstanding this diversity, M. Aymard, who was the first to describe these mammals, remarks that, since few really terrestrial species occur in these palustral beds, and since the species found must have been accompanied by other forms suitable for their food, it may safely be said that the remains discovered are only a small part of the fauna of the early miocene age in France. The great artiodactyle *Anthracotherium*, is found in other beds of the same epoch, yet all the other species, *Theridomys aquatilis*, *Hyænodon leptorhynchus*, *Elotherium magnum* and *Gelocus communis* excepted, are peculiar to this locality. Only one insectivore, *Tetracus nanus*, has been found here, and the rodents, Theridomys excepted, are not well known.

Remains of carnivores are numerous, but belong only to five or six species, and M. Filhol remarks that the numerous ungulates found seem to indicate the existence of more and larger carnivores. With the exception of two species of Hyænodon, the carnivores are small. The coprolites of Cynodon show it fed principally upon small vertebrates, while bones belonging to animals of this genus bear the marks of the powerful teeth of larger carnivores by which they had been devoured. From its broad feet and long tail, Cynodon appears to have been an habitual swimmer in the basins that have furnished the deposits. The marsupials are represented by some small species, most of which belong to the genus Peratherium. These strata are the latest in which the genus Palæotherium occurs.

M. Filhol states that, although he has long studied these remains, he has principally used materials collected by other naturalists, and especially by M. Aymard, and makes no claim to more than a résumé of all that has been done in the locality.

---

[1] Etude des Mammiferes fossiles de Ronzon. (Haute Loire.) By M. H. Filhol.

NEW MAMMALIA FROM THE PUERCO EOCENE.—Professor E. D. Cope recently read a paper before the American Philosophical Society, in which he described nine new species of vertebrates from the above horizon, and extended the characters of several species previously little known. All are Mammalia excepting one species of serpent, which was named *Helagras prisciformis*. Its vertebræ present the peculiarity of having the zygantrum open on each side of the middle line so as to expose the angles of the zygosphen. The projecting median part of the roof of the zygantrum remaining, forms a process which Professor Cope named an *episphen*. This character represents an incompleteness of the zygantrum appropriate to the antiquity of the species, which is the oldest known snake from North America. A new genus of Mammalia was named *Mixodectes*. It was regarded as intermediate between Cynodontomys, and the Eocene half-lemurs. Two species, *M. pungens*, and *M. crassiusculus* were named. The other new species are, *Triïsodon levisianus*, *Phenacodus calceolatus*, *Mioclænus meniscus*, *M. bucculentus* and *M. ferox*. The last species is the largest of the genus, probably equaling a wolf in size. Both are represented by considerable parts of the skeleton, and these possess the general characters of the Creodonta. The dental characters would refer the genus to the Arctocyonidæ. Two species, *(M. brachystomus* and *M. etsagicus)*, from the Wasatch Eocene, have been referred to this genus, on account of the technical identity of the dental characters. These characters are also the same in the genus Pantolestes, which has been referred to the Mesodonta, but without knowledge of the skeleton. Now it has been demonstrated that the *Mioclænus brachystomus* is an artiodactyle. It can therefore no longer be referred to Mioclænus, and as the dentition is identical with that of Pantolestes, it may, with the *M. etsagicus* be placed in the latter genus. Pantolestes must then be provisionally arranged with the Artiodactyla, although the skeleton of the type, *P. longicaudus* of the Bridger epoch, is unknown. This case illustrates the impossibility of deciding on the affinities of some Eocene mammalia by the dentition alone.—*E. D. Cope.*

STRUCTURE OF GLACIERS.—It is now known that the substance of glaciers is made up of crystalline grains (each grain a single crystal), which increase in size as the glacier descends. Swiss physicists differ as to the nature of this increase. Professor Forel attributes it to freezing of water of fusion that comes from the surface through capillary fissures. The mass cooled below zero in winter cannot rise to the temperature of zero in summer except by the latent heat liberated by water at zero, when it freezes in the heart of the glacier. On the other hand, Professor Hagenbach-Bischoff thinks M. Forel's theory inapplicable to the compact mass of the glacier proper (though it may explain the change of pulverulent snow into that of the *névé*, and the change of the *névé* into ice). He considers the cause of the increase to lie in the *overcrystallizing* (Uebercrystallisiren) of one grain at the expense of its neighbor. The known fact that the melting temperature of ice is lowered by excessive pressure and raised by extension, accounts for the plasticity of a crystalline mass; water produced by fusion at points where the pressure is greater is transported and frozen at points of less pressure. It is further supposed that the crystals of ice present differences of compressibility in their different axes; hence crystals differently directed will have unequal power of raising or lowering the temperature of fusion under pressure, and some will tend to grow at the expense of others less favorably directed.—*English Mechanic.*

GEOLOGICAL NEWS.—Professor Zittel in the *Palæontographica* for 1882, describes and figures a number of species of the order Pterosauria from the Solenhofen slate of Bavaria. He corrects and increases our knowledge of the species *Pterodactylus elegans*, *Kochi* and *brevirostris*, and of the species of Rhamphorhynchus. He distinguishes three of the latter, *R. longicaudus*, *R. gemmingi*, and *R. muensteri* (= *R. phyllurus* Marsh).

BOTANY.[1]

NEW SPECIES OF NORTH AMERICAN FUNGI.—*Mitrula luteola.*—1½–3 centimetres high; head mostly compressed, ½–¾ of a centimetre wide, subplicate, light yellow; stipe shorter than the head, paler and tomentose, often slightly hollow; asci narrow, attenuated below, 90–100 × 5–6 μ. paraphyses none; sporidia uniseriate, elliptical, or often slightly bulging on one side, faintly 1–2 nucleate, yellow, when discharged on paper: 6–7 × 2½–32μ Solitary or subcespitose. On the ground among fallen pine leaves in sandy pine woods. Newfield, N. J., Oct., 1882.

Peziza (*Mollisia*) *incrustata.*—Gregarious and often sub-confluent, sessile or contracted below into a very short stipe; disk immarginate convex, scarcely becoming concave, when dry, honey color, pruinose, appearing as if covered with fine crystals of sugar, about $\frac{1}{6}$ mm. in diameter; asci clavate contracted below into a slender base, 30×3½–4μ. paraphyses filiform, simple or branched, sporidia partly biseriate, ovate-oblong, simple, hyaline, 5–6 × 1 μ. On some old resupinate Polyporus, on the under side of a trunk of *Juniperus virginiana* lying on the ground. Newfield, N. J., June, 1882.

Dermatea juniperina.—Erumpent sessile, orbicular, sooty black, disk slightly paler when moist, margin obsolete, about ¼ mm across, contracted below when dry, so as to appear substipitate; asci clavate, cylindrical, 100–114 × 15–18 μ.; paraphyses filiform, scarcely thickened above; sporidia subbiseriate, elliptical, nearly hyaline, with a large central nucleus, 18–20 × 7–12 μ. On dead

---

[1] Edited by PROF. C. E. BESSEY, Ames, Iowa.